

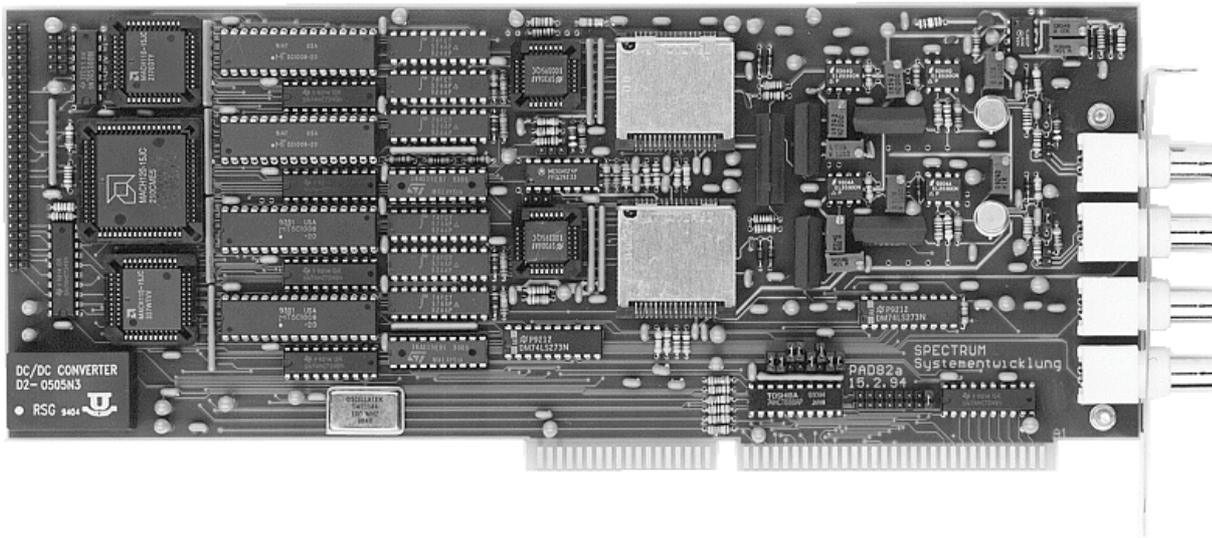


SPECTRUM

SYSTEMENTWICKLUNG MICROELECTRONIC GMBH

PAD82a/b 100 (125) MHz / 200 (250) MHz ISA transient recorder

- **2 analoge Kanäle mit 8 Bit Auflösung**
 - **Simultane Aufnahme auf beiden Kanälen**
 - **100/125 MHz Takt auf zwei Kanälen**
 - **200/250 MHz Takt auf einem Kanal**
 - **Bis zu 2 MSamples Speicher**
 - **DSP-Link Interface zu Signalprozessoren**
- **2 analogue channels with 8 bit resolution**
 - **Simultaneously sampling on both channels**
 - **100/125 MHz sampling on 2 channels**
 - **200/250 MHz sampling on 1 channel**
 - **Up to 2 MSample memory**
 - **DSP-Link interface to signal processors**



Allgemeine Information

Auf der ISA Bus basierenden PAD82a/b sind zwei schnelle A/D-Wandler vorhanden. Diese ermöglichen es, Signale simultan abzutasten, ohne den Zeitversatz von Multiplexsystemen. Die verschiedenen Betriebsmodi, wie Speichersegmentierung, interner/externer Takt und Trigger sowie Pre- und Posttrigger, erlauben eine flexible Anpassung an das Meßsystem. Mit dem standardisierten DSP-Link Interface ist der direkte Anschluß von schnellen Signalprozessoren möglich.

Anwendungsbeispiele: Radar, Ultraschall, LDA/PDA, Time-of-flight, Spektroskopie, Medizintechnik

Software

Kostenlos mitgeliefert werden Treiber für Linux, DOS und Windows 9x/ME/NT/2000/XP. Für die einfache Programmierung sind Beispiele in C/C++, Delphi und Visual Basic enthalten. Darüber hinaus steht zur komfortablen Steuerung die Signalverarbeitungssoftware SBench 5.2 kostenlos zur Verfügung. Außerdem sind Treiber für LabVIEW, DASyLab, MATLAB und VEE erhältlich.

General Information

On the ISA bus based PAD82a/b are two fast A/D-Converters installed. These converters allow it to sample signals simultaneously without the time offset of multiplex systems. The different operating modes like memory segmentation (multiple recording), external and internal clock and trigger as well as pre- and posttrigger allow a flexible adaption to the measuring system. The standard DSP-link interface is ready for direct connection to fast digital signal processors.

Application examples: Radar, Supersonics, LDA/PDA, Time-of-flight, Spectroscopy, Medical technology

Software

Drivers for Linux, DOS and Windows 9x/ME/NT/2000/XP as well as programming examples for C/C++, Delphi and Visual Basic are delivered with the board. Comfortable programming, initialising and data display are performed by the free-of-charge Windows program SBench 5.2. Software drivers for LabVIEW, DASyLab, MATLAB and VEE are available.

Software programmable parameters

Samplerate version b	1 MHz to 250 MHz, external clock
Samplerate version a	781 kHz to 200 MHz, external clock
Input range bipolar	± 200 mV, ± 500 mV, ± 1 V
Input range unipolar	0 - 400 mV, 0 - 1 V, 0 - 2 V
Input Impedance	50 Ohm / 1 MOhm (jumper)
Input coupling	AC / DC (jumper)
Memory depth	256 Samples up to installed memory in increments of 256 samples

Trigger output	enable / disable
Triggermode	channel 0, channel 1, external, software
Triggerlevel	1/16 ... 15/16 of the input range
Triggeredge	rising or falling edge
Clock input	50 Ohm / 1 MOhm (jumper)
Posttrigger	32 Samples up to 1 MSamples in increments of 32 samples

Technical data

Resolution	8 bit
Samplerate version b	250 MHz
Samplerate version a	200 MHz
Bandwidth -3 dB	≥ 60 MHz
Differential linearity error	± 0.6 LSB
Integral linearity error	± 0.6 LSB
ENOB $f_s = 1$ MHz, $f_{ck} = 100$ MHz	7.4 bit typ. (ADC)
ENOB $f_s = 31$ MHz, $f_{ck} = 100$ MHz	6.4 bit typ. (ADC)
Aperture jitter	10 ps typ. (ADC)
Input impedance	50 Ohm or 1 MOhm 25 pF
Overvoltage protection	± 20 V
Connector	9 mm BNC female

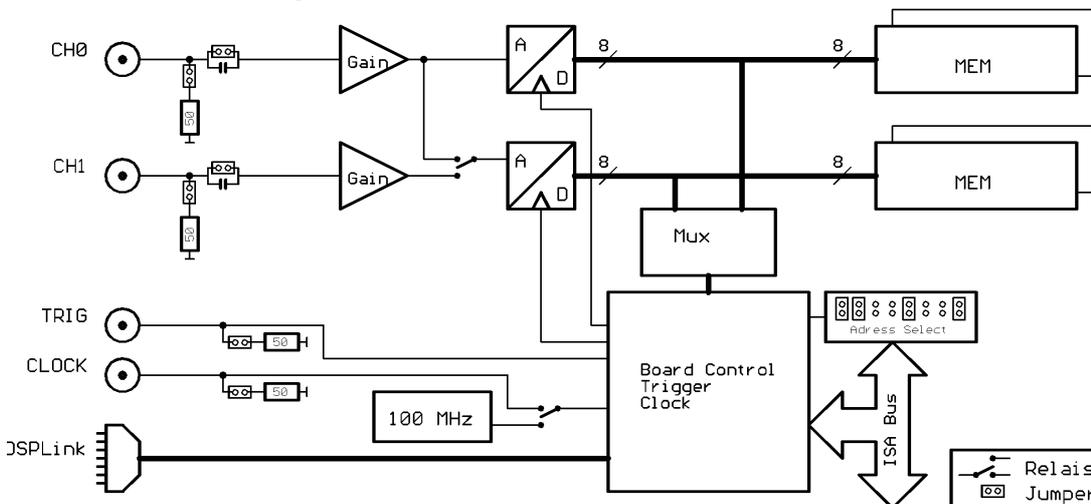
Multi: Trigger to 1 st sample delay	4 samples
Multi: Recovery time	8 samples
Trigger output delay	7 samples + 40 ns
Trigger accuracy (≤ 100 MHz)	2 samples
Trigger accuracy (200 MHz)	4 samples
Ext. clock: delay to internal clock	7 ns typ.

Input range	± 200 mV	± 500 mV	± 1 V
Offset error (100 MHz)	≤ 2 LSB	≤ 2 LSB	≤ 2 LSB
Offset error (200 MHz)	≤ 2 LSB	≤ 2 LSB	≤ 2 LSB
Gain error (100 MHz)	$\leq \pm 1\%$	$\leq \pm 1\%$	$\leq \pm 1\%$
Gain error (200 MHz)	$\leq \pm 1\%$	$\leq \pm 1\%$	$\leq \pm 1\%$
Noise (100 MHz)	≤ 2 LSB	≤ 2 LSB	≤ 1 LSB
Noise (200 MHz)	≤ 2 LSB	≤ 2 LSB	≤ 1 LSB
Crosstalk	-	-	-

Dimension	290 mm x 109 mm
Warm up time	10 minutes
Operating temperature	0°C - 50°C
Storage temperature	-10°C - 70°C
Humidity	10% to 90% non condensing

	-5 V	+5 V	+12 V	-12 V
Power consumption (A)	0 mA	2600 mA	0 mA	0 mA
Power consumption (W)	0.0 W	13.0 W	0.0 W	0.0 W

Hardware block diagram



Ordering information

PAD82 250 MHz	PAD82b 250 MHz version with 128 kSamples memory including drivers	PAD82b
PAD82 200 MHz	PAD82a 200 MHz version with 128 kSamples memory including drivers	PAD82a
Option 512 k	Memory upgrading to 512 kSamples	PAD82-512
Option 2 M	Memory upgrading to 2 MSamples	PAD82-2
Multiple recording	Memory segmentation for fast repetition rates	PAD82-mr
Input range	3 user specific input ranges between ± 200 mV and ± 3 V, bipolar or unipolar	PAD82-ir
DASYLab driver	Drivers for DASYLab 5.0 for Win 95/98, Win 2000 and Win NT	PAD82-dl
Agilent VEE driver	Drivers for Agilent VEE 5.0 for Win 95/98, Win 2000 and Win NT	PAD82-hp
LabVIEW driver	Drivers for LabVIEW 4.0 for Win 3.11, Win 95/98, Win 2000 and Win NT	PAD82-lv
Matlab driver	Drivers for MatLab 5.0 for Win 95/98, Win 2000 and Win NT	MATLAB

This board is an old product and is not recommended for new designs. Use the PCI.208 or PCI.248 instead.

Spectrum reserves the right to make changes at any time to improve design and to supply the best product possible